

Translation

PATENT COOPERATION TREATY



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference PCT03-091 | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
| International application No. PCT/JP2003/003927 | International filing date (day/month/year) 28 March 2003 (28.03.2003) | Priority date (day/month/year) 01 April 2002 (01.04.2002) |
| International Patent Classification (IPC) or national classification and IPC H04N 7/01 | | |
| Applicant MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD. | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I Basis of the report
- II Priority
- III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

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|--|--|
| Date of submission of the demand 12 September 2003 (12.09.2003) | Date of completion of this report 14 June 2004 (14.06.2004) |
| Name and mailing address of the IPEA/JP | Authorized officer |
| Facsimile No. | Telephone No. |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP2003/003927

I. Basis of the report

1. With regard to the elements of the international application:*

 the international application as originally filed the description:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

 the claims:

pages _____, as originally filed

pages _____, as amended (together with any statement under Article 19)

pages _____, filed with the demand

pages _____, filed with the letter of _____

 the drawings:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

 the sequence listing part of the description:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

 the language of a translation furnished for the purposes of international search (under Rule 23.1(b)). the language of publication of the international application (under Rule 48.3(b)). the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

 contained in the international application in written form. filed together with the international application in computer readable form. furnished subsequently to this Authority in written form. furnished subsequently to this Authority in computer readable form. The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished. The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. The amendments have resulted in the cancellation of: the description, pages _____ the claims, Nos. _____ the drawings, sheets/fig. _____5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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PCT/JP03/03927

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

| | | | |
|-------------------------------|--------|------------|-----|
| Novelty (N) | Claims | 1-14 | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | 5-7, 11-14 | YES |
| | Claims | 1-4, 8-10 | NO |
| Industrial applicability (IA) | Claims | 1-14 | YES |
| | Claims | | NO |

2. Citations and explanations

Claims 1-4 and 8-10

Document 1 JP, 2001-169252, A (Victor Company of Japan, Limited), June 22, 2001
 (06.22.01), full text, Figs. 1-9

Document 1 describes a field interpolation method determination device that determines whether to convert the fields of input interlace signals into progressive signals by synthesizing frames either by inter-field interpolation or intra-field interpolation method, comprising 1) a pixel level difference detecting means detecting respective pixel level differences based on pixels in the fields around the interlace signals and intra-field interpolation pixels generated from the input interlace signals, 2) a field correlation detecting means generating the matching coefficient and movement detecting coefficient by detecting the coefficient of an intra-field interpolation pixels generated from the input interlace signals based on the pixel level difference and pixels around the input interlace signals, and 3) an interpolation method determination means determining whether to execute an inter-field interpolation method or intra-field interpolation method based on movement detecting coefficient.

Document 2: JP, 6-105292, A (Deutsche Thomson Brandt GmbH.), April 15, 1994
 (04.15.94), full text, Figs. 1-6

Document 2 describes a field/frame correlation determination means that detects pixel level difference, outputs N-1 field correlation determination signals based on the pixel level difference, and judges whether two continuous fields in N continuous fields were generated from an identical frame, based on the pattern of the N-1 field correlation determination signal.

In addition, using information used for determining whether to carry out the inter-field interpolation method or the intra-interpolation method described in document 1 as the field/frame correlation determination means described in document 2 would be obvious to a party skilled in the art.

Claim 5

The documents listed in the ISR and document 3 newly cited in the written opinion neither describe nor suggest counter means for incrementing by one when it has been determined that generation was from an identical frame, resetting the count value when it has been determined that generation was from different frames, and holding the count value the same when no determination is made.

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VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

“When it is determined generated from a different frame” of claim 1 is a mistake for “when it is determined that it was generated from a different frame.”

“When no determination made” of claim 5 is a mistake for “when no determination is made.”

“An inter-field interpolation method determination device to claim 1” of claim 13 is a mistake for “an inter-field interpolation method determination device described in claim 1.”

“The previous AND circuit” of claim 14 is a mistake for “said AND circuit.”

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of Box V. 2:

Claims 6 and 7

Document 3: JP, 9-322126, A (Nippon Hoso Kyokai), December 12, 1997 (12.12.97), full text, Figs. 1-13

Document 3 is a document indicating the general state of the art in the relevant technical field; it describes a technology for detecting 2-3 pull-down and 2-2 pull-down timing, by calculating an intra-field average value of the pixel difference absolute value between two fields when 2-3 pull-down, and in one field when 2-3 pull-down, and if the latest value of the intra-field average value of the pixel difference absolute value is the smallest value, in the case of 2-3 pull-down, for the past five fields, and in the case of 2-2 pull-down, for past two fields, and if the value is the smallest, in the case of 2-3 pull-down, it will be generated before the five fields and in the case of 2-2 pull-down it will be generated before the two fields. However, the documents listed in the ISR and document 3 newly cited in the written opinion neither describe nor suggest determining by detecting a pattern of six fields or more inter-field pixel difference values when it is 2-2 pull-down and five fields or more inter-field pixel difference value when it is 2-3 pull-down.

Claims 11 and 12

The documents listed in the ISR and document 3 newly cited in the written opinion neither describe nor suggest inter-field difference determination means, signal level detection means for detecting a signal level showing brightness of an image displayed by one field delayed input interlace signals, or whether to cause changes to a first threshold value or to a second threshold value based on the signal level value.

Claims 13 and 14

The documents listed in the ISR and document 3 newly cited in the opinion neither describe nor suggest carrying out an inter-field difference determination using a field identification signal.